



# 2025 HPC Fall Virtual Meeting

Friday, November 21, 2025



## Sustainability

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HEALTHCARE PACKAGING CONSORTIUM

## 2025 HPC Fall Virtual Meeting

Friday, November 21, 2025

8:30 a.m. – 2:00 p.m., Central Time Zone

**Co-Host: The Institute of Packaging Professionals (Mid-South Chapter)**

|                         |                                                                                                                                                                                                                                                                         |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 a.m. – 9:00 a.m.   | <ul style="list-style-type: none"><li>• <b>Welcome</b></li><li>• <b>Recognition of Professional Certification Recipients</b><br/><i>Pong Malasri, CBU</i></li></ul>                                                                                                     |
| 9:00 a.m. – 9:30 a.m.   | <ul style="list-style-type: none"><li>• <b>Authentication and Traceability of Sustainable Materials, Products and Packaging Using Embedded Microtransponders</b><br/><i>Bill Eibon, p-Chip</i></li></ul>                                                                |
| 9:30 a.m. – 9:45 a.m.   | <ul style="list-style-type: none"><li>• Break</li></ul>                                                                                                                                                                                                                 |
| 9:45 a.m. – 10:15 a.m.  | <b>Packaging with Purpose</b><br><i>Amy Hughes &amp; NataLee Allen, ClearBags</i>                                                                                                                                                                                       |
| 10:15 a.m. – 10:30 a.m. | <ul style="list-style-type: none"><li>• Break</li></ul>                                                                                                                                                                                                                 |
| 10:30 a.m. – 11:00 a.m. | <b>Sustainability Executed at Metronic</b><br><i>Thor Hanna, Medtronic</i>                                                                                                                                                                                              |
| 11:00 a.m. – 11:15 a.m. | <ul style="list-style-type: none"><li>• Break</li></ul>                                                                                                                                                                                                                 |
| 11:15 a.m. – 11:45 a.m. | <ul style="list-style-type: none"><li>• <b>Innovations in Sustainable Medical Packaging Solutions</b><br/><i>Jennifer Lauderback, Impact Plastics Group</i></li></ul>                                                                                                   |
| 11:45 a.m. – 12:00 noon | <ul style="list-style-type: none"><li>• Break</li></ul>                                                                                                                                                                                                                 |
| 12:00 noon – 12:30 p.m. | <b>Disrupting Plastics: A Materials Revolution</b><br><i>Chad Jenkins, PulpFixin.us</i>                                                                                                                                                                                 |
| 12:30 p.m. – 12:45 p.m. | <ul style="list-style-type: none"><li>• Break</li></ul>                                                                                                                                                                                                                 |
| 12:45 p.m. – 1:15 p.m.  | <ul style="list-style-type: none"><li>• <b>Determination of R-Value Using the Guarded Hot Plate Method: EPS, PUR, Corrugated, and Cork Insulation Materials</b><br/><i>Janiah Anderson &amp; Ruben Oropeza, CBU ISTA Certified Thermal Testing Laboratory</i></li></ul> |
| 1:15 p.m. – 1:30 p.m.   | <ul style="list-style-type: none"><li>• Break</li></ul>                                                                                                                                                                                                                 |
| 1:30 p.m. – 2:00 p.m.   | <ul style="list-style-type: none"><li>• <b>Performance-Based Estimation of the R-Value for a Compostable Insulation Material</b><br/><i>Pong Malasri, CBU ISTA Certified Thermal Testing Laboratory</i></li></ul>                                                       |

## Registered Participants

(As of 9/19/25)

|                                       |                                |
|---------------------------------------|--------------------------------|
| 1. NataLee Allen                      | ClearBags                      |
| 2. Janiah Anderson                    | CBU ISTA Certified Thermal Lab |
| 3. Rajesh Balasubramanian             | Christian Brothers University  |
| 4. April Bonner                       | Solventum                      |
| 5. Jacob Byrd                         | Beckman Coulter                |
| 6. Laura Abigail Cervantes Angulo     | Universidad La Salle Bajio     |
| 7. Eric Clark                         | Christian Brothers University  |
| 8. Tyler Collins                      | Christian Brothers University  |
| 9. Broc Couling                       | Smith-Nephew                   |
| 10. Jeff Cowens                       | CCL Industries                 |
| 11. Bill Eibon                        | p-Chip Corporation             |
| 12. Vamshi Kumar Gattu                | Christian Brothers University  |
| 13. Thor Hanna                        | Medtronic                      |
| 14. Aamir Howisha                     | Christian Brothers University  |
| 15. Amy Hughes                        | ClearBags                      |
| 16. Chad Jenkins                      | PulpFixin.us                   |
| 17. Erin Kimble                       | International Paper            |
| 18. Jennifer Lauderback               | Impact Plastics Group          |
| 19. Cory Layman                       | Guardian Medical               |
| 20. Pong Malasri                      | CBU ISTA Certified Thermal Lab |
| 21. Kyle McCarter                     | FedEx                          |
| 22. James Meech                       | Sarepta Therapeutics           |
| 23. Cherith Minnis                    | West Memphis School District   |
| 24. Matt Marrow                       | Sonoco                         |
| 25. Ricardo Navarro                   | Universidad La Salle Bajio     |
| 26. Andrea Berenice Navarro Hernández | Universidad La Salle Bajio     |
| 27. Ruben Oropeza                     | Christian Brothers University  |
| 28. Anna Richards                     | Packaging Compliance Labs      |
| 29. Manikanta Vara Prasad Thanniru    | Christian Brothers University  |
| 30. Natalia Valdivia                  | Universidad La Salle Bajio     |
| 31. John Ventura                      | CBU ISTA Certified Thermal Lab |
| 32. Patricia Villasana Ramos          | Universidad La Salle Bajio     |



Congratulations to the following CBU students for their accomplishments,  
since the last HPC meeting in April 2025!

**ISTA Packaging Dynamics Professional In-Training**

*Eric Clark  
Tyler Collins  
Vamshi Kumar Gattu  
Aamir Howisha  
Manikanta Vara Prasad Thanniru*

**OSHA 10-Hour General Industry**

*Ruben Oropeza*

**CBU Packaging Engineering Graduate Certificate**

*Rajesh Balasubramanian  
Eric Clark  
Tyler Collins*



# Authentication and Traceability of Sustainable Materials, Products and Packaging Using Embedded Microtransponders

**Bill Eibon<sup>1</sup>**

**Abstract:** There are many elements contributing to attaining a sustainable healthcare packaging future. The ability to independently validate claims of material and component provenance, sustainable processing methods, carbon footprint, waste and recyclability is desired by consumers and needed by the Healthcare Packaging Industry. A claims validation system that is auditable, affordable at scale, and rugged enough to ride with the material itself—from resin and fiber through converting, sterilization, use, return, and recovery is a missing piece of the sustainability puzzle. The current practices utilizing printed and etched marks are easily copied, labels detach, and conventional RFID struggles with formfactor and substrate constraints. More critically, supply chain data remains fragmented, blocking circularity claims and Scope3 reporting from being verifiable.

A comprehensive system of silicon based crypto anchors that provide unique serial identification of physical objects has been developed. The authenticity and traceability of the tagged physical objects is enabled by deploying compact Bluetooth enabled scanners that drop into existing workflows. Each scan can capture recycled content, sterilization lot, and transport conditions, enabling defensible sustainability metrics and targeted recalls that minimize waste. Because the crypto anchor is embedded and tamper evident, identity persists through use and recovery, strengthening circular programs while reducing material over labeling. Each scan updates a digital twin record via direct data integration into LIMS, existing IT, ERP and multilayer blockchain systems to deliver a secure, interoperable “single source of truth.” The platform integrates with SAP Business Technology Platform for enterprise grade data flows and process triggers; connectors map read events to ERP/quality/SCM systems to automate release, genealogy, and audit reporting.

The presentation closes with a review of commercially scalable methods of attachment of MTP’s directly to electronic components, lab consumables, diagnostic tools and multiple packaging formats using labeling, potting and injection molding processes.

**Keywords:** *Sustainability; Healthcare; Smart Packaging; Digital Traceability; Anti-counterfeiting; Provenance*

## **Presenter:**

*Bill Eibon* – Bill Eibon is Chief Technology Officer at p-Chip Corporation. He has years of experience in disruptive material technologies and digital taggant solutions. Bill is also Founder and Chief Scientist at Adawe Material Science LTD. His other work experiences include VP Commercialization at Hygratek LLC and Director of Technology Acquisition at PPG Industries,

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<sup>1</sup> [Bill.Eibon@p-chip.com](mailto:Bill.Eibon@p-chip.com)

# Packaging with Purpose

*Amy Hughes<sup>1</sup> and NataLee Allen<sup>2</sup>*

**Abstract:** Packaging is often misunderstood - especially when it comes to plastics. In this session, Packaging with Purpose, we will challenge the myths, uncover the facts, and reveal how packaging can actually protect both people and the planet. You will learn why plastics are often misunderstood, how innovative materials like recycled plastics, compostable PLA, NatureFlex, and glassine products compare. Through real examples, we will show how ClearBags is helping brands balance beauty, performance, and environmental responsibility. If you have ever wondered how to cut through the noise of “eco-friendly” claims and make packaging choices that truly make a difference - this is the session you will not want to miss.

**Keywords:** *Innovative Materials; ClearBags; Eco-Friendly*

## **Presenters:**

*Amy Hughes* – Amy is a results-driven leader with over twenty years of contributions in broadcast, print and digital sales, account brand marketing management, digital tactics, customer service and business development. She joined ClearBags in 2022 as its Chief Sales, Marketing and E-Commerce Leader. Before joining ClearBags, Amy worked for American Advertising Federation, Gray Television, Entercom, Citadel Broadcasting, and Barnstable Broadcasting.

*NataLee Allen* – NataLee is the CEO and Visionary of ClearBags since 2019. It is her passion, but it is not just about the bag, box, or pouch. It is about people. She has a passion for connection and upward direction in all things good.

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<sup>2</sup> [natalee@clearbags.com](mailto:natalee@clearbags.com)

# Sustainability Executed at Medtronic

*Thor Hanna<sup>1</sup>*

**Abstract:** The overarching Packaging Waste Reduction project focused on streamlining operations, enhancing sustainability, and reducing costs across Medtronic's processes. Presentation will review four high impact programs completed at the Spine and Biologics business. Collectively, these initiatives reduced annual greenhouse gas emissions by 429.5 tons, fossil fuel consumption by 1534.2 GJ, and diverted fifty-four tons of paper waste, demonstrating a significant environmental impact equivalent.

**Keywords:** *Sterilization; Packaging Reduction; eIFU; Collaboration; Problem Solving*

**Presenter:**

*Thor Hanna* – Thor Hanna is Senior Principal Packaging Engineer and Technical Fellow at Medtronic. He has been with Medtronic for over seventeen years. He earned his BS in Mechanical Engineering from the University of Tennessee at Martin. He led a team of individuals to earn the 2025 Medtronic EHS Sustainability Award.

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# Disrupting Plastics – A Material Revolution

*Chad Jenkins<sup>1</sup>*

**Abstract:** PulpFixin presents alternatives to unnecessary single use-plastics used in the scientific, pharmaceutical and biotech industries. These industries, much like most other industries, have been transformed into being mostly reliant on plastics for the majority of products used in workflows and processes.

The overuse of plastics has created tremendous challenges to the health of our society and environment.

The ability for bioplastics to evolve as a natural alternative to traditional fossil fuel plastics [such as polypropylene, polyethylene, etc.] has been problematic due to several serious challenges; 1. Supply 2. Cost 3. Durability 4. Ability to be drop-in replacements.

Here we present a means for a material to overcome these challenges with such speed that a long evolutionary process to change from traditional plastics to sustainable materials could be revolutionary. The materials that we present here are paper or paper pulp.

PulpFixin has created a line of sample storage racks, boxes and containers that can be drop-in replacements for plastics that meet all of the requirements for use in today's modern and automated laboratories. These products are able to meet the requirements by utilizing a combination of high-quality materials, unique and patented engineering, manufacturing, design and a proprietary sealant branded as FeatureFilm. These aspects come together to provide products with a fit, form and functionality that replicate the plastic counterparts that they are looking to replace in the market.

The PulpFixin products meet the durability and performance of plastics and still meet the sustainability goals that are increasingly being demanded from the industry by corporate goals, social pressure and government, state regulations attempting to achieve zero or negative carbon impact, elimination of fossil fuels, elimination of plastics and/or elimination of the creation of microplastics. PulpFixin products are compatible with broadly available and accessible paper and/or cardboard recycling systems if not compostable in industrial compostable systems as defined by ASTM D6400 standards.

We present data that demonstrates the durability of the finished products as they compare to the industry standard products manufactured from fossil fuels. We also present a path to quickly and radically replace unnecessary plastics that are so entrenched in the scientific and biotechnology industries with products that are easily recyclable and compostable.

**Keywords:** *Sustainable Plastic Alternatives, Paper Pulp, Microplastics, Plastic Free, Compostable, Recyclable, Automation Ready, Cold Chain, Sustainable Packaging, Cryogenic Storage*

## **Presenter:**

*Chad Jenkins – CEO PulpFixin, LLC*

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<sup>1</sup> Chad Jenkins, CEO, Pulp Fixin, LLC [chad.jenkins@pulpfixin.us](mailto:chad.jenkins@pulpfixin.us) 1.408.888.8436 [www.pulpfixin.us](http://www.pulpfixin.us)

# Determination of R-Value Using the Guarded Hot Plate Method: EPS, PUR, Corrugated, and Cork Insulation Materials

*Janiah Anderson<sup>1</sup> and Ruben Oropeza<sup>2</sup>*

**Abstract:** This experiment will test the insulation properties of both common and uncommon types of insulation materials available in the packaging market. The materials that will be used are Expanded Polystyrene (EPS), Polyurethane (PUR), Corrugated board, and densely packed Cork sheets. Both EPS and PUR materials are the most common, but they are not environmentally friendly. The cork and corrugated board are both biodegradable, compostable, and recyclable. This gives them the possibility of becoming better options as insulating materials. The experimental method will use a hot plate to heat each of the four different materials, one at a time, while a metal plate covers the top of the material at room temperature. Thermocouples will be used to track the temperature change through the material. This will simulate how heat starts on the outside of the packaging and then seeps in over time. The experimental results will be recorded on a computer program to help later calculate the thermal resistances or the R-values. The calculated R-values of each material will then be compared to determining which material has the best insulating properties.

**Keywords:** *R-Value; Insulation Materials; EPS; PUR; Corrugated; Cork*

## **Presenters:**

*Janiah Anderson* – Janiah is a hardworking and driven senior engineering management student at CBU. She enjoys challenging projects and challenging her brain. She has always loved math, which led her to her decision to pursue engineering.

*Ruben Oropeza* – Ruben is a junior at CBU pursuing both packaging engineering and engineering management. He is a member of CBU ISTA Certified Lab team. His professional certifications include ISTA PDP In-Training, Lean Six Sigma Yellow Belt, and OSHA 10-Hour General Industry.

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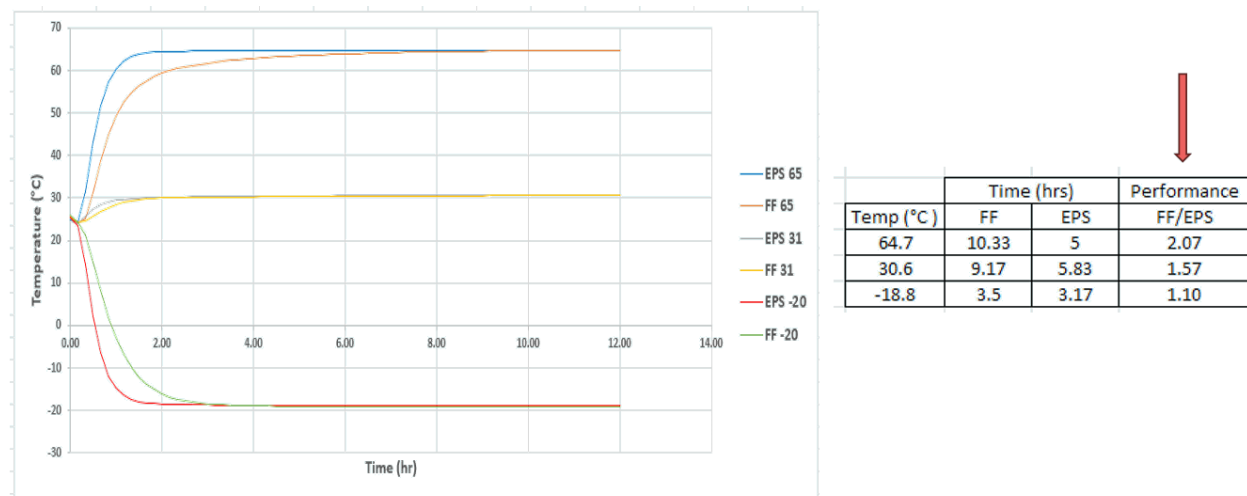
<sup>2</sup> [roropeza@cbu.edu](mailto:roropeza@cbu.edu)

# Performance-Based Estimation of the R-Value for a Compostable Insulation Material

*Siripong Malasri<sup>1</sup>*

**Abstract:** This presentation will describe a performance-based estimation of the R-Value for a compostable insulation material, FeatureFoam from PulpFixin.us. Compostable packaging is a sustainable alternative to traditional packaging materials. Compostable materials break down quickly and the process is safe and environmentally friendly.

Two insulated containers of the same size were used, one made from FutureFoam and another from EPS. The two containers were placed in an environmental chamber at 65.5°C, 30.0°C, and -20°C. The performance ratio was calculated from the time it took for the interior temperature of each container to reach the set chamber temperature. The R-Value of EPS is well established. With the performance ratio, the R-Value of FutureFoam was estimated.



**Keywords:** *Insulated Container; Compostable Material; R-Value; EPS; Sustainability*

## **Presenter:**

*Siripong Malasri* – Dr. Pong is Packaging Initiatives Coordinator at CBU. Besides the Healthcare Packaging Consortium, he also runs the ISTA Certified Transport Testing Laboratory and ISTA Certified Thermal Testing Laboratory at the university. Dr. Pong is an IoPP Certified Packaging Professional and an ISTA Certified Thermal Professional at Level II.

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o o o o

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2025  
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**LOOKING FOR PACKAGING INTERNS OR  
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- 4AB
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# COLD-CHAIN TECHNOLOGIES

Editors: Siripong Malasri & Talia Pfeifer  
Healthcare Packaging Series: Book 2



June 2024

# COLD CHAIN EXPERIMENTS

EDITORS: SIRIPONG MALASRI & REEM MOHAMED



August 2025

# THERMAL TESTING

Editors:  
Siripong Malasri  
Jerrica Quinn



December 2025



# PACKAGING ENGINEERING GRADUATE CERTIFICATE

[pong@cbu.edu](mailto:pong@cbu.edu)

Requirement: Three courses

For anyone interested in packaging,  
we recommend the following **online** courses:

- ENGM 640 Packaging Technology
- ENGM 642 Sustainability
- ENGM 644 Transport Packaging
- ENGM 646 Packaging for Ecommerce

For those interested in cold chain packaging,  
we recommend the following **online** courses:

- ENGM 647 Thermodynamics & Heat Transfer in Cold-Chain Packaging
- ENGM 648 Pharmaceutical and Medical Device Packaging
- ENGM 649 Distribution of Temperature-Sensitive Products
- ENGM 653 Measuring & Monitoring Temperature



**Pong Malasri**

PhD, PE, CPP, LPDP, CTP II  
CBU  
ENGM 640, 644, 648, 649



**Joe Zhou**

PhD, MBA, CPP  
FEDEX  
ENGM 642, 646



**Ali Pourhashemi**

PhD  
CBU  
ENGM 647



**John Ventura**

PhD, PE, PS, CTP I  
CBU  
ENGM 653